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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/615,671

Filing Date: July 09, 2003

Appellant(s): PORTER ET AL.

Peter J. Cronk
For Appellant

EXAMINER'S ANSWER

MAILED

JAN 11 2006

GROUP 1700

This is in response to the appeal brief filed November 14, 2005 appealing from the
Office action mailed May 17, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The rejection of claims 1-9 and 25-29 under 35 USC 112, first paragraph, is withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,460,633	Kobayashi et al.	7-1984
4,581,275	Endo et al.	4-1986
5,038,555	Wu et al.	8-1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

A. Claims 1-5, 7, 9, 22, and 25-29 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi et al. (U.S. Patent No. 4,460,633).

Kobayashi et al. disclose a reinforcement fabric comprising warp and weft yarns that are soft twist multifilament yarns (column 2, lines 5-20). The weft yarns have a greater amount of twist than the warp yarns (Example 1). The matrix resin applied to the fabric after it has been treated with adhesive agent (column 3, lines 32-44) would comprise Appellant's claimed resinous coating. Although Kobayashi et al. do not teach the coating weight distribution ratio (WPU_{cd} / WPU_{md}) of less than 2.0:1, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. multifilament warp and weft threads) and in the similar production steps (i.e. weft threads twisted more than the warp threads then coated with a resin) used to produce the reinforcement fabric. The burden is upon the Appellant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the claimed ratio of coating weight would obviously have been provided by the process disclosed by Kobayashi et al. for several reasons. Kobayashi et al.

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teach that impregnation of the matrix resin into the warp is important by disclosing their invention makes impregnation of the matrix resin into the warp easy (column 2, lines 39-43). Kobayashi et al. also teach that it is important to avoid inhibiting impregnation of matrix resin to the warp (column 1, line 67 – column 2, line 2). Finally, Kobayashi et al. teach that improved strength is obtained with matrix resin impregnated into the warp yarns (column 3, lines 32-36). The claim language only requires the warp to pick up at least $\frac{1}{2}$ the amount of resin that the weft picks up. Therefore, It would have been obvious to a person having ordinary skill in the art at the time of the invention to increase the amount of coating on the warp threads in order to increase the strength of the fabric, as taught by Kobayashi et al. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

With regard to claims 2 and 25, Kobayashi et al. teach providing a warp twist between 5 and 40 times/m (column 2, lines 57-58). With regard to claims 3 and 25, Kobayashi et al. disclose a weft twist of not more than 40 turns/m, but preferably not more than 20 turns/m (column 3, lines 2-4). With regard to claim 4, Kobayashi et al. teach glass fiber for both warp (column 2, line 53) and weft (column 2, line 66). With regard to claim 5, Kobayashi et al. teach a nonwoven scrim fabric (Figure 2). With regard to claims 7 and 29, drawing the warp yarns in tension is a method of manufacturing limitation, not a product limitation. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of

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production. If the product in the product-by- process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Drawing the warp yarns under tension would not create a materially different product. With regard to claims 9 and 28, the adhesive added to the weft yarns prior to formation of the fabric (column 2, lines 10-11) would act as a hydrophobic or oleophobic agent.

B. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view of Endo et al. (U.S. Patent No. 4,581,275).

Kobayashi et al. teach that the fabric is a reinforcement, but do not teach using it in a cementitious panel. Endo et al. teach that similar fabrics (i.e. glass fiber fabrics coated with resin) are used to reinforce cement (column 1, lines 5-55). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the fabric of Kobayashi et al. to reinforce cement in order to derive greater usage from the fabric, as taught by Endo et al.

C. Claims 6, 8, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. in view Endo et al. as applied above, and further in view of Wu et al. (U.S. Patent No. 5,038,555).

Neither Kobayashi et al. nor Endo et al. teach using a PVC coating. Wu et al. teach that fiberglass scrims used as reinforcement fabrics are coated with PVC plastisol (column 8, lines 2-4). It would have been obvious to a person having ordinary skill in the art at the time of the invention to coat the fiberglass scrim of Kobayashi et al. with

PVC in order to make the fiberglass reinforcement suitable for reinforcing cement, as taught by Wu et al. With regard to claim 8, Wu et al. teach providing lubricity to the glass fibers before applying the PVC coating (column 10, lines 11-34).

(10) Response to Argument

Appellant argues that the invention is fundamentally different from Kobayashi et al. primarily because Kobayashi et al. do not teach coating or impregnation of warp yarns prior to use of the reinforcement in a matrix. However, Kobayashi et al. teach that the warp yarns are impregnated with a resin (column 2, lines 58-63). The claimed limitation that the impregnation happens “prior to use” of the reinforcement in a matrix is merely a claim limitation directed to the subsequent intended use of the fabric. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The glass fiber reinforcement of Kobayashi et al. is capable of being bonded to an alkaline matrix, so it meets the claimed limitations.

Appellant argues that once the Kobayashi et al. reinforcement is applied to a matrix resin, it is no longer a flexible fabric. Appellant asserts that this is in contrast to Appellant’s invention, which is directed to a fabric. However, Appellant provides no evidence for this allegation. Additionally, Appellant has no claim limitations directed to the flexibility of the article nor is there a claim limitation as to the amount of resinous coating applied to the article. Even if Kobayashi et al. applied relatively more resin and

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created a resinous composite, no claim limitation indicates how much flexibility or how much resin should be impregnated onto the fabric. Therefore, Kobayashi et al. still meet all claimed limitations.

Appellant argues that Kobayashi et al. cannot be a woven fabric. However, Appellant has no claim limitation directed to a woven fabric.

Appellant argues that the resinous coating applied to the fabric is part of the claimed invention, whereas use in a matrix is the end-use of the claimed invention. However, there is no limitation in the claims to distinguish the “resinous coating” of Appellant’s invention from the resin coated onto the fabric of Kobayashi et al.

Appellant argues that Kobayashi et al. teach impregnation of only the weft yarns by an adhesive agent. Appellant asserts that the claimed invention has a resinous coating disposed over a substantial portion of said warp and weft yarns. However, this argument misrepresents the rejection. The Examiner made it clear that it was the matrix resin applied to the fabric after it has been treated with adhesive agent, and not the adhesive agent itself, that would comprise Appellant’s claimed resinous coating. The resinous matrix of Kobayashi et al. is applied to both warp and weft (see column 3, lines 52-57 and Figure 2, which describe a procedure where both warp and weft will be coated with resin). Additionally, it is noted that Appellant’s claims do not preclude the presence of an adhesive agent.

Appellant argues that Examiner’s assertion that the “matrix resin” of Kobayashi et al. would comprise Appellant’s claimed resinous coating is erroneous. However,

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Appellant's claims fail to have a limitation that would distinguish the claimed "resinous coating" from the resin used in Kobayashi et al. to impregnate both warp and weft.

Appellant argues that the wefts of the Kobayashi et al. reinforcement are impregnated with adhesive agent, and therefore cannot be impregnated with matrix resin. This is incorrect because it again reads Appellant's claim limitations more narrowly than they are written. First, Appellant's claims state that a "resinous coating is disposed over a substantial portion of said warp and weft yarns" (see claim 1).

Appellant's claims do not require the resin to impregnate the weft fibers. The matrix resin of Kobayashi et al. meets this claim limitation because after the resin is applied to the weft with a brush or a roll (see column 3, line 54), it will be "disposed over" the weft. Therefore, Kobayashi et al. meet the claimed language. Second, the Examiner acknowledges Appellant's assertion that the wefts of Kobayashi et al. cannot be subsequently impregnated with matrix resin because of the application of adhesive agent, but disagrees with it also. Appellant points to column 1, lines 67-68 of Kobayashi et al. which states "the application of adhesive agent ... inhibits impregnation of matrix resin" to support the assertion. However, one cannot read the word "inhibit" to mean "prohibit" as Appellant has done. The chemistry definition of "inhibit" means to "prevent or decrease the rate of" (The American Heritage® Dictionary of the English Language, Fourth Edition, 2000 by Houghton Mifflin Company). Therefore, one cannot read Kobayashi et al. to definitely exclude all matrix resin from impregnating the wefts.

Appellant argues that the Kobayashi et al. reinforcement is applied to a resinous composite as an end-use reinforcement application. Appellant asserts that once

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embedded, it is no longer a fabric, and cannot be used to reinforce further matrices. However, this argument has several flaws. First, it is directed to a subsequent intended use of the resin-coated fabric. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. In this case, there are no structural claim limitations that distinguish the present invention from Kobayashi et al. The material of Kobayashi et al. is still a fabric. Coating it with a resin does not destroy the structure of the underlying fabric. Appellant's claims require that a resinous coating be present, which Kobayashi et al. provide. The claims do not recite any limitation as to how much coating is present, so any argument directed to the fact that Kobayashi et al. provide more resin than Appellant does is outside the scope of the claims. Second, it assumes that the fabric of Kobayashi et al. becomes embedded in a resin matrix. However, Kobayashi et al. do not teach this. Kobayashi et al. do specifically disclose that the matrix resin is applied using a roll or a brush (column 3, lines 52-54). This means that the resin is applied to the fabric, not that the fabric is somehow embedded into a resin.

Appellant argues that once Kobayashi et al. add their fabric to a resinous matrix, it is no longer drapable or flexible. However, while Appellant can speculate as to what flexibility and drapability the material of Kobayashi et al. possesses, there exists no claim limitation directed to either of these properties in the claims.

Appellant argues that the coating weight distribution ratio of less than about 2.0:1 is not inherent to the invention of Kobayashi et al., since Kobayashi et al. never achieves

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this ratio while it is a fabric. However, the material of Kobayashi et al. is a fabric coated with a resin. The present invention claims a fabric coated with a resin. There is no distinguishing claim limitation that indicates at what point a fabric would become a solid composite instead of just being a fabric. The coating weight distribution ratio requires that the warp pick up greater than or equal to $\frac{1}{2}$ the amount of resin that the weft fibers pick up. This limitation is rather broad and the basis of inherency is set forth above in the rejection. Looking at Figure 2 of Kobayashi et al., given the breadth of the warp fibers (2) compared to the weft fibers (1), it would only seem natural that the resin pick-up of the warp fibers would be at least $\frac{1}{2}$ that of the weft-fibers.

Appellant argues that Appellant seeks to avoid impregnation of the warp and weft yarns of their fabric by the matrix to which the fabric is applied whereas Kobayashi et al. seek to maximize the impregnation of the warps in their fabric by the matrix to which the reinforcement is applied. This argument mischaracterizes the rejection because the matrix resin used by Kobayashi et al. is the material that comprises Appellant's claimed resinous coating. Also, this argument is again based on the intended uses of the products rather than the structural claim limitations versus what the prior art discloses. The material of Kobayashi et al. meets all the structural claim limitations.

Appellant argues that Kobayashi et al. teach away from impregnation of warps prior to use of the reinforcement in the matrix. Once again, the resinous matrix taught by Kobayashi et al. is the material that comprises Appellant's claimed resinous coating. Appellant is attempting to make the "adhesive agent" disclosed by Kobayashi et al. comprise the claimed "resinous coating" while also attempting to make the "resinous

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matrix" disclosed by Kobayashi et al. comprise the claimed "alkaline matrix." This is a mischaracterization of the rejection. It is clearly stated that the "resinous matrix" of Kobayashi et al. is intended to function as Appellant's claimed "resinous coating."

Appellant argues that Endo et al. teach away from impregnation of either of the warp and weft yarns. However, Endo et al. was not used in the rejections for such a teaching. Endo et al. is used to teach that it is well known in the prior art to use resin impregnated fabrics to reinforce cement (column 1, lines 5-55). While Endo et al. may teach using a reinforcing fabric that does not contain resin, this does not take away from the fact that using resin impregnated fabrics in cementitious composites is well known.

Appellant points to column 7, line 41 et seq. of Endo et al. to show that the reference teaches cement does not penetrate well into a base cloth prepared with adhesive impregnated fibers. However, none of Appellant's claims contain recitations pertaining to cement penetrating into fabrics. Appellant's recitation of a "cementitious board" only occurs in the preamble of claim 23, but there is no substantive limitation as to the composition, position, or structure of cement. As stated above, Endo et al. teach that it is known to use resin coated fabrics in cement boards.

Appellant argues that Endo et al. do not teach the coating weight distribution ratio of less than 2.0:1. However, Kobayashi et al. teach this limitation by themselves, as set forth above.

Appellant argues that there is no suggestion to combine the Kobayashi et al. and Endo et al. references. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the

claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Endo et al. teach one of ordinary skill in the art in their "Background of the Invention" section that resin coated glass fabrics have been used in cementitious applications. Therefore, one of ordinary skill in the art would have motivation to use the material of Kobayashi et al. in cementitious applications in order to derive more use from the invention. Endo et al. is not used to show that fabrics should not be coated with resin, but rather is used to show that fabrics coated with resin are known to be used for cementitious applications.

Appellant argues that Wu et al. add nothing to make up for the deficiencies of Kobayashi et al. and Endo et al. However, the Examiner feels that no such deficiencies exist.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Jeremy R. Pierce
January 5, 2006

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